Preliminary on Cosmic with Capacitive-Sharing uRWELL

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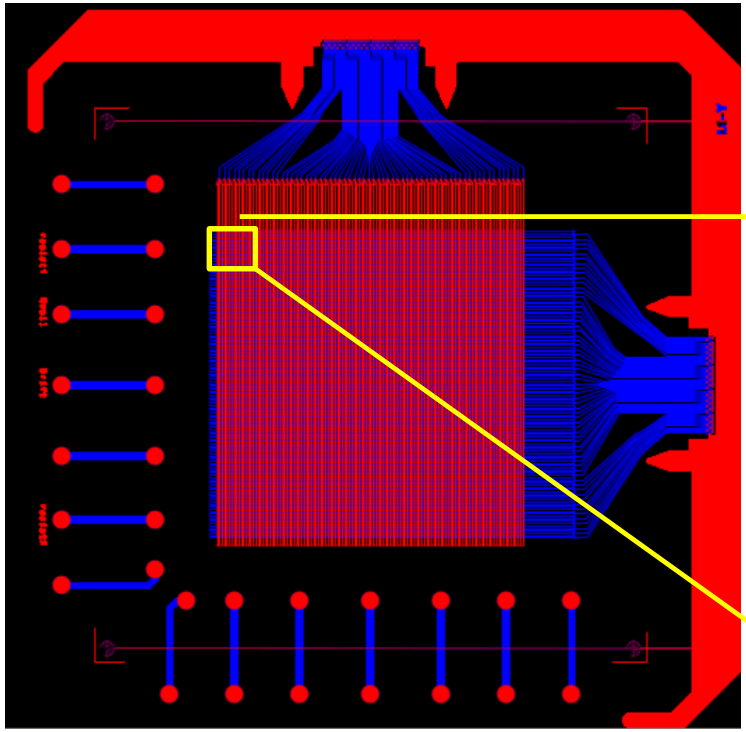
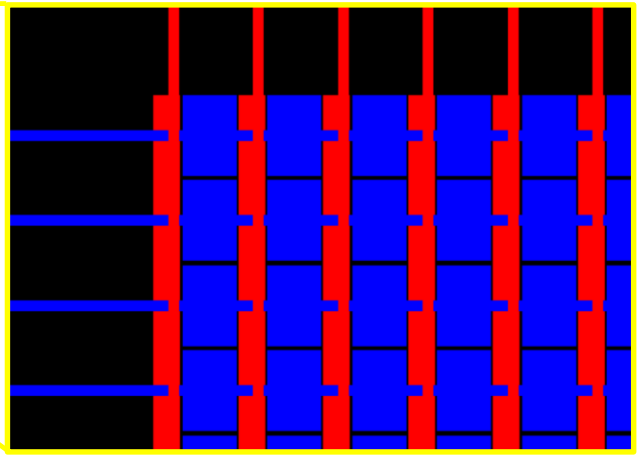
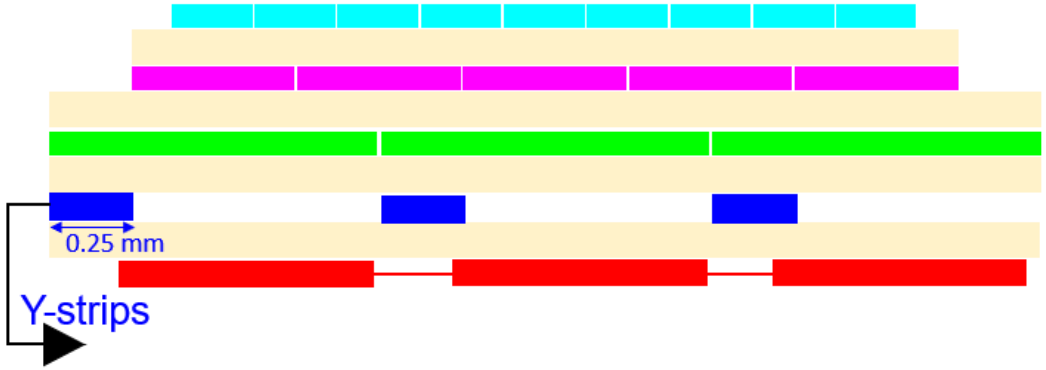
µRWELL with capacitive-sharing X-Y strips R/O: 800 µm pitch

- Pitch is 800 µm => twice COMPASS design strip
- X and Y strips on different layers separated by 50 µm Kapton but unlike “COMPASS”, Kapton not etched out between top and bottom strips
- Signal on top and bottom strip collected through capacitive sharing from the same green pad layer
- But dielectric between green pad layer and bottom strip layer is 100 µm (2 Kapton layers) and 50 µm (1 Kapton layer) for top strip layer
  - Therefore, width of top strip (red) 250 µm smaller than width bottom strip (blue) layer 500 µm to compensate for dielectric thickness
  - The optimal ration will be studied on the next prototype to be procured from CERN
- Strips design optimized to minimize cross talk between ton and bottom strips







Preliminary cosmic results with 2 µRWELL :

“COMPASS” X-Y (400 µm) vs. capa-sharing X-Y (800 µm) R/Os

X/Y ADC correlation Average cluster size ADC distribution